

REMARKS

Claims 13-15 are pending and rejected in the present application. Claim hereby. Claims 13 and 15 are amended hereby.

Responsive to the rejections of claims 13-15 under 35 U.S.C. §112, second paragraph, Applicant has amended claims 13 and 15.

5 More particularly, claim 13 has been amended to recite in part "moving the wafers in the cleaning fluid through said megasonic waves and transverse to the megasonic waves." (*Emphasis Added*). Claim 13 was rejected as being indefinite since it was not clear to the Examiner how the path could be traversed two or more times when the required movement should be along
10 the path. As amended, claim 13 makes clear that the wafers travel through the waves in a direction transverse to the waves. Accordingly, Applicants submit that claim 13 and claim 14 depending therefrom are now in allowable form.

Claim 15 was rejected as being indefinite and incomplete. Applicants
15 have amended claim 15 keeping in mind the comments offered by the Examiner, for which courtesy the Examiner is thanked. More particularly, Applicants amended claim 15 to clarify that the megasonic waves have a laminar flow. A laminar flow is defined as a streamline flow in a fluid near a solid boundary. (*Meriam Webster OnLine Dictionary, [http://www.m-](http://www.merriam-webster.com/home.htm)*
20 [w.com/home.htm](http://www.merriam-webster.com/home.htm)). A laminar flow is generally opposite to a turbulent flow. Applicants submit that claim 15 is now in allowable form.

Responsive to the rejection of claims 13 and 14 under 35 U.S.C.

§102(b) as being anticipated by any one of U.S. Patent Nos. 5,533,540,
5,427,622 and 5,579,792, Applicants respectfully traverse.

Claim 13 recites in part "generating two or more parallel sets of
5 megasonic waves in a cleaning fluid" and "moving the wafers in the cleaning
fluid through said megasonic waves and transverse to the megasonic waves."
(*Emphasis Added*). Applicants submit that the cited references, alone or in
combination, fail to disclose or suggest such limitations.

"A claim is anticipated only if each and every element as set forth in the
10 claim is found, either expressly or inherently described, in a single prior art
reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631,
2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The devices disclosed by the
Stanasolovich, et al., patents do not generate two or more parallel sets of
megasonic waves. Further, the devices disclosed in the Stanasolovich, et al.,
15 patents move the wafers along a path that is parallel, rather than transverse,
to the megasonic waves. Thus, the Stanasolovich, et al., patents fail to
disclose or suggest generating two or more parallel sets of megasonic waves
in a cleaning fluid and moving the wafers in the cleaning fluid through the
megasonic waves in a direction transverse thereto, as recited in part by claim
20 13.

If the rejection is applying the principles of inherency, i.e., that the

devices of the Stanasolovich, et al., patents perform the claimed method,
Applicants respectfully traverse those grounds as well.

If a prior art device, in its normal and usual operation, would
necessarily perform the method claimed, then the method claimed will be
5 considered to be anticipated by the prior art device. *In re King*, 801 F.2d
1324, 231 USPQ 136 (Fed. Cir. 1986). Applicants submit that the
Stanasolovich, et al., patents do not perform the method recited by claim 13,
and that therefore claim 13 is not anticipated thereby.

The Stanasolovich, et al., patents do not disclose or suggest a device
10 that generates two or more parallel sets of megasonic waves in a cleaning
fluid. Nor do the Stanasolovich, et al., patents disclose or suggest a cleaning
device within which the wafers are moved through the megasonic waves in a
direction along transverse thereto. Thus, the Stanasolovich, et al., devices do
not perform the method of generating two or more parallel sets of megasonic
15 waves or of moving wafers through the megasonic waves in a direction
transverse thereto, as recited in part by claim 13. Since the devices disclosed
in the Stanasolovich, et al., patents do not perform the method recited by
claim 13, Applicants submit that Stanasolovich, et al., does not inherently
anticipate claim 13.

20 For the foregoing reasons, Applicants submit that claim 13 and claim
14 depending therefrom are in condition for allowance, and respectfully
request same.

Responsive to the rejection of claim 15 under 35 U.S.C. §102(b) as being anticipated by any one of U.S. Patent Nos. 5,533,540, 5,427,622 and 5,579,792, Applicants have amended claim 15.

Claim 15 recites in part “dispersing the waves in a divergent manner”
5 and “exposing the semiconductor wafers to the dispersed megasonic waves within the cleaning fluid”. (*Emphasis Added*). Applicants submit that the cited references, alone or in combination, fail to disclose or suggest such limitations.

The present invention disperses the megasonic cleaning waves before
10 they reach or impact upon the wafers, and thereby exposes all of the wafers to a substantial level of dispersed megasonic energy. (*page 6, lines 1-4 of the present specification*). Thus, in the present invention, the wafers are exposed to previously-dispersed megasonic waves.

In contrast, each of the devices disclosed by the Stanasolovich, et al.,
15 patents cancel and/or absorb reflected megasonic waves. The Stanasolovich, et al., patents do not disperse or otherwise deflect the megasonic waves prior to the impact of the waves upon the wafers. Rather, the Stanasolovich, et al., patents expose the wafers to undisturbed megasonic waves. Only after the waves have passed by and/or impacted with the wafers are the waves
20 absorbed or canceled by destructive interference. The Stanasolovich, et al., patents do not teach, disclose or suggest dispersing the megasonic waves before they reach or impact upon the wafers. Thus, the Stanasolovich, et al.,

patents fail to disclose or suggest dispersing the waves in a divergent manner and exposing the semiconductor wafers to the dispersed megasonic waves, as recited in part by claim 15.

For the foregoing reasons, Applicants submit that claim 15 is now in
5 condition for allowance, and respectfully request same.

For all the foregoing reasons, Applicants submit that the pending claims are definite and do particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Moreover, Applicants submit that the pending claims are also in condition for allowance. Accordingly,
10 Applicants respectfully request withdrawal of all objections and allowance of the claims.

The Examiner is invited to telephone the undersigned in regard to this Amendment and the above identified application.

Respectfully submitted,

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Date


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